BOBBY JINDAL
GOVERNOR

PEGGY M. HATCH
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Mr. Jonathan Manns
PPG Industries, Inc.
Post Office Box 1000
Lake Charles, LA 70602

RE: PPG Industries, Inc.- Lake Charles Complex
LAD008086506/Agency Interest No. 1255 /PER20090035
Public Notice of Draft Approval for Variance from the Classification as a Solid Waste for Spent Copper Catalyst, Pursuant to LAC 33:V.105.O.1.c and 105.O.2.c

Dear Mr. Manns:

The Waste Permits Division has received your submittal dated October 12, 2009, regarding the request to grant a variance from the classification as a solid waste for spent copper catalyst resulting from operation of the Per-Tri (Perchloroethylene and Trichloroethylene) and the OHC (Oxyhydrochlorination) reactors.

Based on the information submitted, the Waste Permits Division proposes to issue the site-specific variance regarding the spent copper catalyst at the PPG Industries Lake Charles Complex. Attached is a copy of the proposed draft decision document for the site-specific variance and additional documentation, which will be made available during a thirty day comment period. A final decision document will be prepared after the end of the public comment period.

Please reference your Agency Interest Number 1255, EPA ID Number LAD 008 086 506 and Permit Activity Number PER20090035 on all future correspondence pertaining to this matter. If you have any questions, please contact Will F. Steele of the Waste Permits Division at (225) 219-3050.

Sincerely,

Sam Phillips
Administrator
Waste Permits Division

c: Donelson Caffery – Waste Permits Division
Craig Easley – Enforcement Division

VERIFICATION BY FACILITY

The undersigned verifies that PPG Industries, Inc., Lake Charles Complex has received a copy of the draft decision document and public notice regarding:

RE: Request For Public Comments On a Draft Approval for a Variancefrom the Classification as a Solid Waste
PPG Industries Inc - Lake Charles Complex
AI1255, PER20090035, Permit Number LAD008086506
Westlake, Calcasieu Parish, Louisiana

PPG INDUSTRIES, INC., LAKE CHARLES COMPLEX

By: _____ Date: _____

Please complete and return this form promptly to the address listed below:

Ms. Laura Ambeau
Louisiana Department of Environmental Quality
Office of Environmental Services
Environmental Assistance Division
PO Box 4313
Baton Rouge, LA 70821-4313
Phone (225) 219-3277

FAX (225) 325-8157

PUBLIC NOTICE
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY (LDEQ)
PPG INDUSTRIES, INC., - LAKE CHARLES COMPLEX
DRAFT DECISION DOCUMENT TO GRANT SITE-SPECIFIC VARIANCE
FROM CLASSIFICATION AS A SOLID WASTE

The LDEQ, Office of Environmental Services, is accepting written comments on a draft decision document for a site-specific variance from Classification as a Solid Waste for PPG Industries, Inc., P.O. Box 1000, Lake Charles, Louisiana, 70602 for the Lake Charles Complex. **The facility is located at 1300 PPG Drive, Westlake, Calcasieu Parish.**

PPG Industries is seeking a variance from the classification as a solid waste of spent copper catalyst to allow the recycling of the spent material. PPG Industries generates used catalyst that when hazardous is characteristic for 1,2-dichloroethane, hexachlorobutadiene, tetrachloroethylene, or trichloroehtylene. The material may also be described by the waste codes D028, D033, D039 and D040. Of the copper catatlyst disposed of offsite, approximately 20 percent is classified as industrial solid waste and 80 percent is classified as hazardous waste after characterization. Copper catalyst is used in fluidized reactor beds for the production of halogenated carbon compounds. Due to particle size issues, catalyst is eventually removed from the reaction and disposed. However, PPG Industries proposes to recycle the copper catalyst for use in the fluidized reactor beds. To recycle the copper catalyst, a size sieving process will be employed; no combustion or chemical treatment is involved. Thus, under LAC 33:V.105.O.1.b, LDEQ is public noticing the draft decision to grant a site-specific variance at the PPG Industries, Lake Charles Complex.

Written comments, written requests for a public hearing, or written requests for notification of the final decision regarding this permit action may be submitted to Ms. Soumaya Ghosn at LDEQ, Public Participation Group, P.O. Box 4313, Baton Rouge, LA 70821-4313. **Written comments and/or written requests must be received by 12:30 p.m., Tuesday, March 16, 2010.** Written comments will be considered prior to a final permit decision.

If LDEQ finds a significant degree of public interest, a public hearing will be held. LDEQ will send notification of the final permit decision to the applicant and to each person who has submitted written comments or a written request for notification of the final decision.

The Draft Decision Document to Grant a Site-Specific Variance from Classification as a Solid Waste is available for review at the LDEQ, Public Records Center, Room 127, 602 North 5th Street, Baton Rouge, LA. Viewing hours are from 8:00 a.m to 4:30 p.m., Monday through Friday (except holidays). **The available information can also be accessed electronically on the Electronic Document Management System (EDMS) on the DEQ public website at www.deq.louisiana.gov.**

Additional copies may be reviewed at the Calcasieu Parish Library, Westlake Branch, 937 Mulberry Street, Westlake, LA 70669-4601 and the Calcasieu Parish Library, Sulphur Regional Branch, 1160 Cypress Street, Sulphur, LA 70663-5111.

Inquiries or requests for additional information regarding this permit action should be directed to Will F.Steele, LDEQ Waste Permits Division, P.O. Box 4313, Baton Rouge, LA 70821-4313, phone (225) 219-3050.

Persons wishing to be included on the LDEQ permit public notice mailing list or for other public participation related questions should contact the Public Participation Group in writing at LDEQ, P.O. Box 4313, Baton Rouge, LA 70821-4313 by email at deqmaillistrequest@la.gov or contact the LDEQ Customer Service Center at (225) 219-LDEQ (219-5337).

Permit public notices including electronic access to the draft decision document and associated information can be viewed on the LDEQ permits public webpage at www.deq.louisiana.gov/apps/pubNotice/default.asp and general information related to the public participation in permitting activities can be viewed at www.deq.louisiana.gov/portal/tabid/2198/Default.aspx.

Alternatively, individuals may elect to receive the permit public notices via email by subscribing to the LDEQ permits public notice List Server at www.doa.louisiana.gov/oes/listservpage/ldeq_pn_listserv.htm

All correspondence should specify AI Number 1255, Permit Number LAD008086506, and Activity Number PER20090035.

Scheduled Publication Date: February 11, 2010

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BOBBY JINDAL
GOVERNOR

PEGGY M. HATCH
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Mr. Jonathan Manns
PPG Industries, Inc.
Post Office Box 1000
Lake Charles, LA 70602

DRAFT

RE: PPG Industries, Inc.- Lake Charles Complex
LAD008086506/Agency Interest No. 1255 /PER20090035
Final Approval for Variance from the Classification as a Solid Waste
for Spent Copper Catalyst, Pursuant to LAC 33:V.105.O.1.c and 105.O.2.c

Dear Mr. Manns:

The Waste Permits Division has received your submittal dated October 12, 2009, regarding the request to grant a variance from the classification as a solid waste for spent copper catalyst resulting from operation of the Per-Tri (Perchloroethylene and Trichloroethylene) and the OHC (Oxyhydrochlorination) reactors. Copper catalyst from the OHC reactor bed when the bed requires service and blow down steam from the Per-Tri reactor are collected and disposed as industrial solid waste or hazardous waste following waste characterization. PPG determined that spent catalyst could be returned to the original Per-Tri and OHC reactors with minimal processing. The variance would cover the spent catalyst recovered from and reused in both the Per-Tri and OHC reactors.

In the reactor beds, the copper catalyst consists of a matrix of different sized copper catalyst particles. During the reaction, the copper catalyst is worn into smaller particles by motion in the fluidized reactor beds. The reactor beds require the right mixture of catalyst particle sizes for optimal performance and require service to maintain the performance, which is generally when too much fine catalyst has accumulated in the reactor beds. By removal of the fine catalyst by removal of a portion of the copper catalyst and the insertion of virgin catalyst, the performance of the reactor is maintained. The removed copper catalyst would be disposed as an industrial solid waste or hazardous waste.

PPG Industries would instead process the removed catalyst by screening out undesirable fines using a catalyst screening system. The recovered material would then be reused in the catalyst reactor beds. Specifically, catalyst from the Per-Tri reactor blowdown and OHC reactor bed dump would be processed through the catalyst screening system. An associated catalyst transfer

DRAFT

system would serve to transfer the catalyst from the containers to the screening system through a closed system. The recovered material would then be reused in the catalyst reactor beds.

After careful review and consideration of your submittal, the Waste Permits Division hereby grants PPG Industries' request for a variance from the classification as a solid waste, the spent copper catalyst recovered from and reused in the Per-Tri and OHC reactors. This variance remains valid as long as the following conditions are met:

- *The management of the spent catalysts shall not: 1) cause a discharge or imminent threat of a discharge into or adjacent to the waters of the state; 2) create and maintain a nuisance; or 3) violate any applicable provisions of the Louisiana Administrative Code and the U.S. and Louisiana Department of Transportation laws and regulation.*

- *All records of how the catalysts are reclaimed and recycled at PPG Industries' facility shall be maintained in an easy to retrieve and easy to copy format.*

- *If at anytime the spent catalysts are sent for disposal prior to final reclamation, the material shall be properly disposed of at a permitted disposal facility in accordance with the Solid or Hazardous Waste Regulations as applicable.*

- *Any spent copper catalyst or processed copper catalyst must be stored in the RCRA permitted container storage areas.*

- *The catalyst processing must occur in the catalyst screening system and the catalyst transfer system described in the October 12, 2009 request.*

- *All permits required for the operation of the catalyst screening system must be approved and in place before the operation of the system can commence.*

This variance is based on the assumption that the information provided to LDEQ by PPG Industries is complete and accurate. PPG Industries shall inform the LDEQ by written notification in a timely manner, of any deviation from or changes to the information in the variance request which would affect PPG Industries' ability to comply with applicable regulatory requirements or variance conditions. This variance may be suspended, modified, revoked, reissued or terminated for cause.

The granting of this variance does not constitute a defense against any past or future non-compliance with state or federal regulations. Additionally, the granting of this variance does not constitute Department approval for any activity or process that may require a permit or a modification to an existing permit.

Please reference your Agency Interest Number 1255, EPA ID Number LAD 008 086 506 and Permit Activity Number PER20090035 on all future correspondence pertaining to this matter. If you have any questions, please contact Will F. Steele of the Waste Permits Division at (225) 219-3050.

Sincerely,

DRAFT

Cheryl Sonnier Nolan
Assistant Secretary

c: Donelson Caffery – Waste Permits Division
Craig Easley – Enforcement Division

FACT SHEET

FOR THE DRAFT SITE-SPECIFIC VARIANCE
PREPARED FOR

PPG Industries, Inc.
Lake Charles Complex

EPA ID# LAD008086506
Agency Interest # 1255

1300 PPG Drive
Westlake, Louisiana
Calcasieu Parish

Permit Activity No. PER20090035

I. INTRODUCTION

This fact sheet has been developed in accordance with the Louisiana Administrative Code (LAC) 33:V.703.D and briefly sets forth principal and significant facts, legal, methodological and policy requirements of the proposed draft site-specific variance for PPG Industries, Inc., EPA ID Number LAD008086506, Agency Interest Number 1255, for the facility located in Westlake, Calcasieu Parish, Louisiana.

The Louisiana Department of Environmental Quality (LDEQ) has prepared this proposed draft site-specific variance which addresses the requirements of LAC Title 33, Part V, Subpart 1 and the Resource Conservation and Recovery Act (RCRA) as amended by the 1984 Hazardous and Solid Waste Amendments (HSWA).

In accordance with LAC 33:V.105.O.1.c and 105.O.2.c, PPG Industries is seeking a site-specific variance from classification as a solid waste for spent copper catalyst generated at PPG Industries, Lake Charles Complex. The spent catalyst is generated from operation of Per-Tri (Perchloroethylene and Trichloroethylene) and OHC (Oxyhydrochlorination) reactors used in the production of various chlorinated hydrocarbons. PPG proposes to recover spent catalyst and return the material back into the original Per-Tri and OHC reactions.

The original variance request was submitted October 12, 2009. Having reviewed the documentation and determined it to be sufficient, LDEQ under the authority granted by the Louisiana Environmental Quality Act, in particular La. R.S. 30:2014 and 2022; by the Executive Reorganization Act, in particular La. R.S. 30234, proposes to grant this site-specific variance. The Administrative Authority for this variance is the Secretary of the Louisiana Department of Environmental Quality (LDEQ), or his/her designee.

II. THE VARIANCE PROCESS

The purpose of this fact sheet is to initiate the variance decision process. The LDEQ's Waste Permits Division is required to prepare this draft site-specific variance. The draft site-specific variance sets forth all the applicable conditions, which PPG Industries is required to comply with during the life of the variance. PPG Industries submitted its site-specific variance request, dated October 12, 2009, to comply with the Louisiana Environmental Quality Act and the Louisiana Administrative Code (LAC) regulations to request a variance from the definition of solid waste under Subtitle C of the Resource Conservation and Recovery Act (RCRA) for spent copper catalyst.

The public notice process will afford the LDEQ, interested citizens, and other agencies the opportunity to evaluate the ability of the permittee to comply with the requirements of the LAC 33: V, Subpart 1.

The public is given a minimum of thirty (30) days to review and comment on the draft site-specific variance. The Administrative Authority, prior to making a decision or taking any final action on the draft variance request, will consider all significant comments. The decision of the Administrative Authority shall be to issue, deny, modify, or revoke the draft site-specific variance in accordance with LAC 33:V.705.

A. DRAFT SITE-SPECIFIC VARIANCE

The Waste Permits Division reviewed the variance request and other pertinent technical information, and prepared a draft site-specific variance that contains by reference the language and technical information that pertains to the operation and maintenance activities for the listed facility.

This draft site-specific variance is a tentative determination and is not the final decision of the Administrative Authority.

B. PUBLIC COMMENT PERIOD

The Administrative Authority has determined that the procedure contained in LAC 33:V.105.K.2.b will be used to public notice this draft variance. The Administrative Authority will public notice the draft variance for thirty (30) days.

The specific dates for the opening and closing of the public comment period are contained in the public notice that was issued for this particular permitting action. Any person interested in commenting on the draft variance for the PPG Industries, Lake Charles Complex, must do so within the allotted thirty (30) day comment period.

If LDEQ finds a significant degree of public interest, a public hearing will be held.

The location and time of the public hearing would be provided in a separate public notice.

Public notice of the proposed permitting action shall be published in specified newspapers, announced on a designated radio station, and mailed to those persons contained on the facility's mailing list.

C. LOCATIONS OF AVAILABLE INFORMATION

The administrative record, including all supporting documents, is on file at the LDEQ Public Records Center, Room 1-127, 602 North 5th Street, Baton Rouge, Louisiana. These documents may be inspected and copied (at $0.25 per copy page) at any time between the hours of 8:00 to 4:30 p.m., Monday through Friday (except holidays).

In addition, a copy of the draft site-specific variance, fact sheet, and supporting documents are available for review at the local public library listed in the public notice referenced in this draft site-specific variance.

D. WRITTEN COMMENT SUBMISSION

Interested persons may submit written comments on the draft site-specific variance to the Administrative Authority, at the address listed below, on the closing date of the comment period. All comments should include:

1. the name and address of the commenter,

2. a concise statement of the exact basis for any comment and supporting relevant facts upon which the comment is based,

3. identification of the facility commented on (the EPA Identification Number and AI number), and

4. supporting relevant facts upon which the comments are based.

All comments, further requests for information (including copies of this decision and fact sheet) and any requests by public interest groups or individuals who would like to be included in the mailing list, should be made in writing to

Ms. Soumaya Ghosn
Louisiana Department of Environmental Quality
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313
(225) 219-3276 or fax (225) 219-3309

Any technical questions regarding this draft variance should be addressed to:

Mr. Willard F. Steele
Louisiana Department of Environmental Quality
Office of Environmental Services
Water and Waste Permits Division
Post Office Box 4313
Baton Rouge, LA 70821-4313
(225) 219-3050 or fax (225) 219-3158

III. DESCRIPTION OF OVERALL SITE

PPG Industries Inc., was issued a permit by the LDEQ and the United States Environmental Protection Agency (USEPA) under the authority of the Louisiana Hazardous Waste Control Law R.S. 30:2171 et.seq., and the regulations adopted thereunder and under the authority of the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA) to operate a hazardous waste treatment, storage and disposal facility located in Calcasieu Parish.

PPG operates the Per-Tri (Perchloroethylene and Trichloroethylene) and the multiple OHC (Oxyhydrochlorination) reactors at two production units involved in the production of chlorinated hydrocarbons. These reactors use copper catalyst in fluidized reactor beds. Spent copper catalyst is formed from the fluidized reactor beds. The copper catalyst is present in the reactor beds as a matrix of different particle sizes. A particular proportion of particle size produces an optimal performance for the reactor beds.

Over time, presumably through abrasive processes, the copper catalyst particles are worn to smaller sizes. The fluidized reactor beds require service when the acceptable ratio of particle sizes is no longer present. A portion of the catalyst mixture is removed from the bed and virgin catalyst is added to achieve an acceptable ratio of particle size. The spent catalyst is characterized and disposed of as either industrial solid waste or hazardous waste as appropriate. Approximately 80% of the spent copper catalyst is disposed of off-site as characteristic hazardous waste and 20% is disposed of as industrial solid waste. When hazardous, the spent material is characteristic for 1, 2-dichloroethane, hexachlorobutadiene, tetrachloroethylene, or trichloroethylene and is described by the waste codes D028, D033, D039, and D040. Before being transported for disposal, the waste material is stored in RCRA permitted container storage areas.

PPG Industries determined that with minimal processing a portion of the catalyst disposed of off-site could be reused in the original fluidized reactor beds. Specifically, copper catalyst from the OHC reactor and catalyst fines from blowdown from the Per-Tri reactor could be processed to remove undesirable particle sizes. PPG proposes to use a catalyst screening and

transfer system to remove catalyst fines from the mixture and return acceptable mixture to the reactor beds. The process would involve a physical separation of particle sizes through a sieving process; no combustion or chemical processing is required. With the proposed system, approximately 50 % of the Per-Tri blowdown and approximately 75 % of the OHC reactor dump would be reused in the fluidized reactor beds.

Air emissions will be produced from the processing of the spent catalyst. PPG Industries has applied for an expedited review for a modification to an air permit to address air emissions from the spent catalyst processing. (See EDMS Nos. 44287881 and 44302608.) While this variance addresses the waste classification of the spent catalyst material, PPG Industries must apply for and receive all the applicable permits before implementing any operation to process the spent catalyst.

The proposed variance request meets the standards in LAC 33:V.105.O.1.b. Allowing the reuse of the spent copper catalyst allows some significant benefits. Among these benefits is that less virgin copper material would be required. Generally, regulatory decisions that ease the burden on virgin resources are consistent with RCRA regulation and policy. Also, allowing the reuse of the spent copper catalyst would result in less material destined for hazardous and solid waste disposal. This action would aid in reducing the demand on disposal capacity and reduce the chances for releases to the environment arising from the management and transportation of the waste material.

COPY

PPG Industries, Inc.
Chemicals Post Office Box 1000 Lake Charles, Louisiana 70602-1000 USA
1300 PPG Drive Lake Charles, LA 70601

PER20090029

original to JCHW
copy to HW/Steele
PHH

October 12, 2009

Louisiana Department of Environmental Quality
Attn: Ms. Cheryl Nolan
Office of Environmental Services
Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313

RECEIVED
OCT 2 2009
WASTE PERMITS DIVISION
SOLID & HAZARDOUS WASTE SECTION

2009 OCT 16 AM 11:39
DEQ - OES

Subject: Request for LDEQ Concurrence on Classification of Copper Catalyst
Under Recycle Scenarios
PPG Industries, Inc.
Lake Charles, Louisiana
Agency Interest No. 1255
LAD 008086506-OP-RN-1

Dear Ms. Nolan:

The purpose of this letter is to request LDEQ's concurrence with the appropriate classification of copper catalyst at the PPG Industries, Inc., (PPG) facility located in Lake Charles, Louisiana, when such catalyst is reused. PPG currently operates Per-Tri (Perchloroethylene and Trichloroethylene) reactors and multiple OHC (Oxyhydrochlorination) reactors at the TE-II (Triethane®) and PHH (Vinyl Chloride) Production Units. The Per-Tri, TE-II, and PHH processes are all part of PPG's highly integrated Derivatives Plant. These reactors use a copper catalyst in fluidized reactor beds. When one of the reactor beds requires service, the copper catalyst is removed and is currently disposed of as either an industrial solid waste or a hazardous waste (if it possesses a characteristic of a hazardous waste) (see Attachment 1). In addition, the reactors also have blowdown streams that are collected and sent off-site for disposal as either a solid or hazardous waste, again depending upon the characteristics.

PPG has researched the possibility of using recycled copper catalyst in these units when available rather than disposing of such materials. As discussed below, PPG already directly reuses some used copper catalyst without any processing and returns it back to either the Per-Tri reactors or OHC reactors. The classification of used catalyst being directly reused without processing is not at issue as such material is not classified as a solid waste. This is because pursuant to 40 CFR 261.2(e)(1) (and the definition of "solid waste" under LAC 33:V.109), "materials are not solid wastes when they can be shown to be recycled by being... "[u]sed or reused as effective substitutes for commercial products" or "[r]eturned to the original process from which they are generated, without first being reclaimed or land disposed"." However, PPG believes that, with minimal processing consisting of simple physical separation of catalyst fines from the usable catalyst, a significant amount of additional catalyst can be reused and disposal avoided.

PPG believes this is a sound waste minimization opportunity. Based on a feasibility analysis, PPG determined that "catalyst screening" is both a viable means of managing the material to minimize off-site disposal and will also provide PPG with significant cost savings through reduction of virgin catalyst purchases and avoided waste disposal costs.

Therefore, the purpose of this correspondence is to request the agency's concurrence with PPG's regulatory classification of various catalyst processing scenarios in order to enable PPG to pursue this option while complying with all hazardous waste rules. To facilitate LDEQ's review of the process, the following sections of this correspondence discuss the management and recycling of copper catalyst, the catalyst screening process, and regulatory review.

MANAGEMENT AND RECYCLING OF COPPER CATALYSTS

There are several benefits that would result from the recycling of copper catalyst. Of most importance are the following:

- Reduced dependence on virgin resources extracted from the environment;
- Reuse of the "good" copper catalyst would result in a reduction of approximately 147 tons annually in disposal of hazardous waste in Louisiana if screening of used catalyst under all scenarios described herein is deemed allowable; and
- Significant cost savings estimated to be greater than $500,000 annually if screening of used catalyst under all scenarios described herein is deemed allowable.

During use, the copper catalyst is worn into smaller particles by motion of the material within the fluidized reactor bed. In order for proper fluidization and maximal catalyst surface area to be available in the process, the fluidized bed requires catalyst particles in the right mix of sizes. The catalyst bed requires service when the acceptable particle size ratios no longer are present. This is generally when reactor efficiency is reduced by too much fine catalyst material accumulated within the catalyst bed. By removal of the fine materials, the efficiency in the beds can be restored and the catalyst can continue to be used. However, a certain percentage of fine catalyst is still desirable for appropriate fluidization, so some of the catalyst fines are also reused. Catalyst screening is the process by which a screening device, referred to as a separator, separates useable copper catalyst from unusable copper catalyst. The screening is performed by use of sieves with different mesh sizes to separate and remix the catalyst to restore the appropriate particle size ratios. It should be noted that the "unusable" catalyst is not unusable due to contamination – it is still active; however, the particle sizes may be too small or too large for the needed blend.

The proposed reuse of the copper catalyst will be an expansion of a waste minimization program that PPG has implemented for the Per-Tri and OHC reactors. Currently, a significant portion of the catalyst removed from the reactors during service is reused directly in the reactors. The screening process will enable similar reuse of blowdown from the Per-Tri reactor and additional material from dumping the catalyst bed in the OHC reactors (see Scenario A and B in Table 1 below). Currently, this material is disposed of off-site as either industrial solid waste or hazardous waste.

Table 1

Copper Catalyst Reuse Scenarios

PPG Industries, Inc.
Lake Charles, Louisiana

Source	Proposed to be Screened, then reused*	Disposed*
Scenario A: Per-Tri Reactor Blowdown	~50% to Per-Tri Reactor or OHC Reactor	~50% disposed as fines
Scenario B: OHC Reactor Dump	~75% returned to OHC Reactor for reuse	~25 % disposed as fines

* Recovery percentages are estimates based upon historic composition data.

Approximately 80% of the copper catalyst currently disposed/treated off-site is characteristic hazardous waste, while approximately 20% is non-hazardous solid waste. Prior to off-site management of the copper catalyst "fines", the "fines" are tested to determine whether the material is a characteristic hazardous waste. When hazardous, typically the waste stream is characteristic for 1,2-dichlorethane, hexachlorobutadiene, tetrachloroethylene, or trichloroethylene and is described by waste codes D028, D033, D039, and D040. A typical waste profile sheet is provided as Attachment 1. The material to be sent off-site is stored in containers within PPG's RCRA permitted container storage areas under Permit No. LAD008086506-OP-RN-1.

As can be seen from the above analysis, the anticipated waste minimization benefit from implementation of the catalyst screening process is significant. Additionally, PPG will be able to benefit from avoiding purchasing catalyst to replace that which is presently being sent off-site as waste and the associated waste disposal costs. This will benefit the environment in several ways: less copper is needed for manufacture of copper catalyst; less solid and hazardous waste will be disposed; and less transportation will be involved in bringing virgin catalyst to the site and hauling used catalyst away for disposal.

With respect to both Scenarios A and B, the newly adopted federal Definition of Solid Waste would exclude such materials, provided PPG manages these materials in an appropriate manner (see 73 Fed. Reg. 64688 – 64788, October 30, 2008). However, that definition has not yet been adopted by the State of Louisiana. Therefore, PPG seeks concurrence from LDEQ that:

1) The screening of the catalyst in Scenario B is "incidental processing" and not reclamation; thus, the catalyst is not a solid waste and no hazardous waste permit is needed for the screening operation.

2) Even if the catalyst prior to screening in either Scenario A or B is a "solid waste" within the meaning of LAC 33:V.109, a permit is not required for the temporary storage of catalyst prior to processing or the processing (screening) activity provided such storage prior to processing and the screening operation are within less-than 90 day storage containers or tanks; and

3) In the alternative, and only in the event that the screening operation for either Scenario A or Scenario B is considered reclamation, and thus, the screened material prior to reclamation is considered to be a "solid waste" within the meaning of LAC 33:V.109, then LDEQ will issue a case-by-case variance pursuant to LAC 33:V. 105.O.1.b. (for materials that are reclaimed and then reused within the original production process in which they were generated).

DESCRIPTION OF CATALYST SCREENING PROCESS

The proposed screening process begins by removing the catalyst from the reactor catalyst bed to either drums or roll-off boxes for transport and temporary storage of the unprocessed materials prior to screening. Once screening operations begin, the separator is equipped with a vacuum unit that uses nitrogen to move reactor-dumped catalyst from the drums or roll-off boxes into the separator. The separator vibrates about its center of mass in order to ultimately separate the catalyst. Vibration is accomplished by eccentric weights located on the upper and lower ends of the screener's motion-generator shaft. Rotation of the top weight creates vibration in the horizontal plane while the lower weight acts to tilt the separator vertically, causing material to move across a mesh sieve inside the separator to the sides and out of the discharge spouts into containers. The larger particles separate from the smaller "fines" and discharge from the side of the unit. The larger particles flow into drums that are weighed to specification, labeled, and stored on pallets for recycling in one of the reactors. The smaller undesirable "fines" fall through the sieve into a roll-off box. Most of the fines will be disposed, but in some circumstances where there is a need for a certain proportion of smaller fines in the catalyst blend for the recharging of the beds, such fines may be reused. As noted above, different sieve sizes can be used in order to achieve the appropriate end catalyst particle sizes.

A schematic showing the catalyst screening process is provided as Attachment 2. Photographs of a typical catalyst separator are provided as Attachment 3.

REGULATORY ANALYSIS OF CATALYST SCREENING

PPG has completed a regulatory review of the proposed catalyst screening program. This review is provided herein to assist LDEQ in determining the regulatory status of the catalyst screening process. Our review examines the potentially applicable regulatory scenarios for

management of the process. Based upon our review, PPG believes that the catalyst screening process under all scenarios is currently exempt from regulation under the federal RCRA Definition of Solid Waste, due to amendments passed by EPA in 2008. However, as noted, LDEQ has not yet adopted the revised federal definition, so the analysis relies upon current Louisiana rules. Should LDEQ disagree with our analyses of the screening process relative to the Definition of Solid Waste, PPG is requesting a case-by-case determination under LAC 33:V.105.O. and has provided an analysis of the variance requirements. Additionally, PPG 's review indicates that the screening process should fall within the parameters allowable for implementation without a permit by hazardous waste generators. As such, a modification to the facility RCRA operating permit should not be necessary to implement the process.

I. Definition of Solid Waste

In our first analysis, PPG believes the catalyst screening equipment would not be regulated as a treatment process because the catalyst is not a waste when managed through the equipment. This is primarily based upon the Definition of Solid waste which indicates the catalyst is not waste because it is not discarded prior to the screening process. Federal and Louisiana regulations address this somewhat differently and a review of each is provided in the following two sections.

A. Definition of Solid Waste Under Revised Federal Law

EPA's 2008 Definition of Solid Waste contained in 40 CFR 261.2.a.2.ii states that:

> *"A hazardous secondary material is not discarded if it is generated and reclaimed under the control of the generator as defined in §260.10, it is not speculatively accumulated as defined in §261.1(c)(8), it is handled only in non-land-based units and is contained in such units, it is generated and reclaimed within the United States and its territories, it is not otherwise subject to material-specific management conditions under §261.4(a) when reclaimed, it is not a spent lead acid battery (see §266.80 and §273.2), it does not meet the listing description for K171 or K172 in §261.32, and the reclamation of the material is legitimate, as specified under §260.43."*

This definition was revised by EPA in response to a court order, after many years of litigation. The court ordered EPA to revise the definition because it was too broad and classified as waste many materials that were never "discarded" but were instead used in an on-site, ongoing production process. This rule was promulgated as a final federal rule on October 30, 2008. However, in response to a request from the Sierra Club, EPA is reviewing the rule to determine whether any further amendments may be desirable. It is possible that the rule will be amended to restrict off-site recycling activities more than the current definition does; however, it is unlikely that the on-site recycling provisions will be substantially changed. These provisions to encourage on-site recycling had wide support among the regulated community and state governments and some environmental groups.

B. Definition of Solid Waste Under Louisiana Hazardous Waste Rules

Under LAC 33:V.109, definition of Solid Waste, a spent material that is reclaimed is considered to be a solid waste. Thus, if the used catalyst prior to processing is considered to be a spent material, and if the screening process is considered to be reclamation, then the catalyst prior to processing would be considered to be a solid waste, and if they possess a characteristic of a hazardous waste, they would also be hazardous. PPG does not believe that catalyst that can be reused is "spent" within the meaning of the rules;[1] however, even if it were, PPG believes that the screening of the Scenario B catalysts produced from the OHC Reactors would be considered to be "incidental processing" rather than reclamation, and that this material is not solid waste.

Guidance as to whether a material is "reused" versus "reclaimed" was provided by EPA on October 4, 2005 in a document entitled "Guidance for Identifying Incidental Processing Activities." Under that guidance, incidental processing is not reclamation. If the PPG screening process for the copper catalyst is considered "incidental" processing, then the recycling process will be considered reuse. The determination of whether the screening process is incidental is likely to be dependent on the mass of catalyst that is reused as compared to the mass of catalyst fines sent for disposal. If the mass of the catalyst fines that are sent for disposal after the screening process is minor compared to the mass reused, then it is likely that the screening is considered "incidental" processing and the catalyst is considered "reused". As noted above, under Scenario B, 75% of the catalyst that would be sent for screening will be used and only about 25% will be disposed. With respect to the Scenario B catalyst from blowdown operations, a substantial portion - about 50% is reused after the screening operation. Thus, PPG seeks concurrence from LDEQ that screening of such Scenario B catalyst is "incidental processing", not reclamation and therefore, this catalyst is not a solid waste.

It should be noted that the screening process occurs within a tank (see discussion below). The catalyst is managed in an enclosed manner throughout the process. The unit is equipped with filters and a dust collector to facilitate emission control. In addition, the roll-off boxes receiving the materials following screening are covered with tarp covers or hatches. The materials are conveyed via a hose that is inserted into the covered box. A schematic of the proposed PIAB vacuum conveyor system is shown in Attachment 4.

The unusable catalyst resulting from the screening (likely fines), however, would be considered a solid waste as they are destined for disposal after screening. The rejected material would be

[1] Per LAC 33:V.109-*Spent Material*, a "spent material" is any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing. The catalyst removed from the reactors is chemically active, and therefore, is a direct substitute for virgin catalyst. The material is not "spent" because it can be used for its intended purpose where the particle size distribution is compatible with the particular reactor configuration.

analyzed, and if hazardous, would be stored in an appropriate location or in either the permitted RCRA 1 or 2 container storage areas (CSAs) until enough was accumulated for off-site disposal. As mentioned above, RCRA 1 and 2 CSAs are permitted to store this type of waste (waste codes D028, D033, D039, and D040).

II. Variance from Classification as a Solid Waste

Finally, an alternative approach for management of the screening process is to obtain a variance for the catalyst generated under either Scenario A or B from classification as a solid waste. LAC 33:V.105.O.1.b provides a mechanism that grants requests for variance from classifying materials as solid wastes if they are reclaimed and then reused within the original process in which the materials were generated. A similar variance is also available under LAC 33:V.105.O.2.b. PPG's screening process, if considered to be a reclamation operation, would meet the requirements for either of these variances. Federal guidance concerning interpretation of the corresponding federal regulations (which are no longer necessary given the revised federal definition of solid waste) along with the "sub-criteria" of LAC 33:V.105.O.2.b. is discussed below:

- How economically viable the production process would be if it were to use virgin materials, rather than reclaimed materials;
- The extent to which the material is handled before reclamation to minimize loss;
- The time periods between generating the material and its reclamation and between reclamation and return to the original primary production process;
- The location of the reclamation operation in relation to the production process;
- Whether the reclaimed material is used for the purpose for which it was originally produced when it is returned to the original process, and whether it is returned to the process in substantially its original form;
- Whether the person who generates the material also reclaims it; and
- Other relevant factors.

Under the above criteria, the Scenario A or B catalysts fed to the proposed catalyst screening process should be issued such a variance. In response to the above criteria:

- As noted in the previous discussions, the industrial process from which the catalysts are removed will become more economical by utilization of the screening process by avoiding the purchase of virgin materials and waste disposal costs;

- The copper catalyst prior to screening is managed in drums or roll-off boxes. No catalyst is wasted and the management of the material to be screened is similar to the management of virgin purchased material;

- The time period for management of the material will be generally be within one year as noted previously and will comply with existing storage requirements for RCRA 1 and RCRA 2;

- The recovery process will occur on-site at PPG in the RCRA 1 or RCRA 2 storage areas. Handling and movement needs for the material will not significantly increase from that required currently. However, off-site transport requirements will decrease as less waste material will be generated;

- The reclaimed material is a direct substitute for virgin catalyst in the Per/Tri and OHC reactors and will be returned in substantially its original form; and

- PPG will be both the producer and reclaimer of the materials (if the process is reclamation rather than incidental processing with respect to the Scenario B catalyst).

Given the above information, PPG believes a variance for the Scenario A or B catalyst entering the screening process should be granted. If a variance is granted, the material would not be a solid waste when managed in this manner and would, therefore, be exempt from state hazardous waste requirements. (As previously noted, the material would also be exempt from federal requirements per the revised 2008 Definition of Solid Waste.) PPG understands that the exemption would only apply to the catalyst prior to and during screening and that residues from the screening process that are destined to be discarded would be required to be managed as an industrial solid or hazardous waste based upon their own characteristics.

III. Storage/Treatment In Less-Than-90 Day Containers Does Not Require a Permit

PPG seeks LDEQ's concurrence that, if PPG manages the catalyst under Scenario A (or the catalyst under Scenario B if LDEQ determines it is a solid waste within LAC 33:V.109) in less than 90 day containers and tanks, the use of such containers and tanks does not require a permit. The containers used prior to screening could, with some difficult logistics, be less-than 90 day storage. The screening system meets the definition of a tank, as described below, and no treatment will last more than 90 days in such vessel. Further, PPG seeks concurrence that any catalyst recovered from such may be reused in its process and is not a waste. The unusable residuals of the screening process would be solid waste, and if characteristic, a hazardous waste. Based upon our analysis, the screening process itself could be considered exempt from permitting because it can be completed in accordance with requirements applicable to generators of hazardous wastes under LAC 33:V.Chapter 11.

If the unscreened catalyst is considered to be waste material, screening of the catalyst can be considered to be treatment (reclamation is a form of treatment) in accordance with the definition of treatment in 40 CFR 260.10 (LAC 33:V.109 – Treatment) because it may change the physical composition of the screened material. However, EPA has provided guidance in the March 24, 1986 Federal Register (51 FR 10168) which indicates that generators of hazardous waste may perform limited treatment of their waste in tanks and containers provided the generator complies with the applicable provisions for management of the wastes required in 40 CFR 262.34 (LAC 33:V.1109) and referenced requirements in 40 CFR Part 265 (LAC 33:V.Chapter 43) (i.e., the less than 90 day container and storage provisions).

PPG believes the screening process described falls within the scope of the generator provisions. EPA notes that the treatment must occur within tanks, containers, and containment buildings managed by the generator. A tank is defined in 40 CFR 260.10 as a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) and provides structural support. The catalyst screening apparatus meets this definition of a tank as can be seen in photographs in Attachment 3. The device is constructed as a self-supporting steel enclosure. A PIAB vacuum unit, powered by either nitrogen or air would be used to move the spent catalyst from the drums/roll-off boxes to the catalyst separator. The catalyst is contained within the device during separation. The unit is equipped with filters and a dust collector to facilitate emission control.

As a confirmation of the above interpretation relative to waste minimization activities, the EPA Office of Solid Waste clarified that the definition of a tank can cover equipment that is not necessarily an obvious "tank". EPA notes that equipment such as presses, filters, sumps, and other types of processing equipment can be considered tanks in OSWER directive #9503.51-1A dated December 24, 1985, to promote management of wastewater sludges. PPG's catalyst screening process provides similar waste minimization benefits, and similar consideration of the applicability of the tank definition to the equipment should be appropriate.

The separator/screening equipment, as noted above, thus complies with the definition of a RCRA tank. The catalyst prior to screening would be managed otherwise in drums or roll-off boxes, which comply with the requirements for less-than 90 day containers.

The referenced requirements in 40 CFR Part 265 (LAC 33:V.Chapter 43) discuss management requirements for tanks and containers. PPG will conduct the activities within the RCRA 1 and RCRA 2 permitted storage areas. These areas are permitted storage facilities which meet the requirements of 40 CFR Part 265 (LAC 33:V.Chapter 43). Storage of containers within the two areas is addressed by existing provisions in our RCRA permit and will not, in general, be substantially different than that which is already occurring. Additionally, PPG intends to operate the screener in a manner which will prevent storage of hazardous waste materials within the device for periods greater than 90 days. As such, the screener itself will not require management as a permitted tank. The screener is equipped with emission control devices that will address the requirement for management of the materials within an enclosed system. Given the above circumstances, PPG believes the treatment procedure is generally within the allowable scope for a hazardous waste generator and formal permitting is not necessary.

CONCURRENCE REQUEST

PPG requests LDEQ's concurrence in the following:

1. The screening process for screening Scenario B copper catalyst should be classified as incidental processing rather than reclamation as 75% of the material sent for screening can be reused and only 25% is destined for off-site disposal. Thus, the Scenario B copper catalyst is not a solid waste. The residues from the screening process destined for disposal are solid wastes under LAC 33:V.109, and if characteristic must be managed as characteristic hazardous wastes.

2. LDEQ will issue a variance from the classification of solid waste for the Scenario A catalyst (and the Scenario B catalyst if the answer to request 1 above is negative) pursuant to LAC 33:V.105.O.1.b and/or 105.O.2.b to facilitate the waste minimization plan presented by PPG herein that will allow reuse of such catalyst in an environmentally sound manner.

3. PPG may manage Scenario A or Scenario B catalyst (regardless of whether a solid waste or not) within containers and tanks meeting the requirements for less-than 90 day storage requirements as stated above, without a permit. Thus, PPG may store the catalyst prior to screening and may conduct the screening without a permit, provided the materials are managed pursuant to the hazardous waste rules for less-than 90 day storage.

Please contact Shannon Moses in the PPG Environmental Department at (337) 708-5617 or at smoses@ppg.com, if you or your staff needs any additional information to review this request.

Sincerely,

Don Manns
Works Manager

Attachments

cc: Will Steele – LDEQ
Don Caffery – LDEQ
Sanford Phillips - LDEQ

Typical Waste Profile Sheet

Attachment 1

USED COPPER CATALYST FROM CHLORINATED HYDROCARBON PRODUCTION

Physical Characteristics

Appearance: Sand-like with rocks; not tacky
Color : Tan/Brown
State: Solid
Specific Gravity: 1.0-3.5
pH: 2.0-7.5
Flash Point: NA

Physical Composition

Composition Description	Low		High	Units
Attapulgus Clay	50	To	80	%
Inorganic Salts (copper chloride, potassium chloride)	10	To	40	%
Water	0	To	20	%
Debris (plastic bags, etc.)	0	To	5	%

Chemical Composition

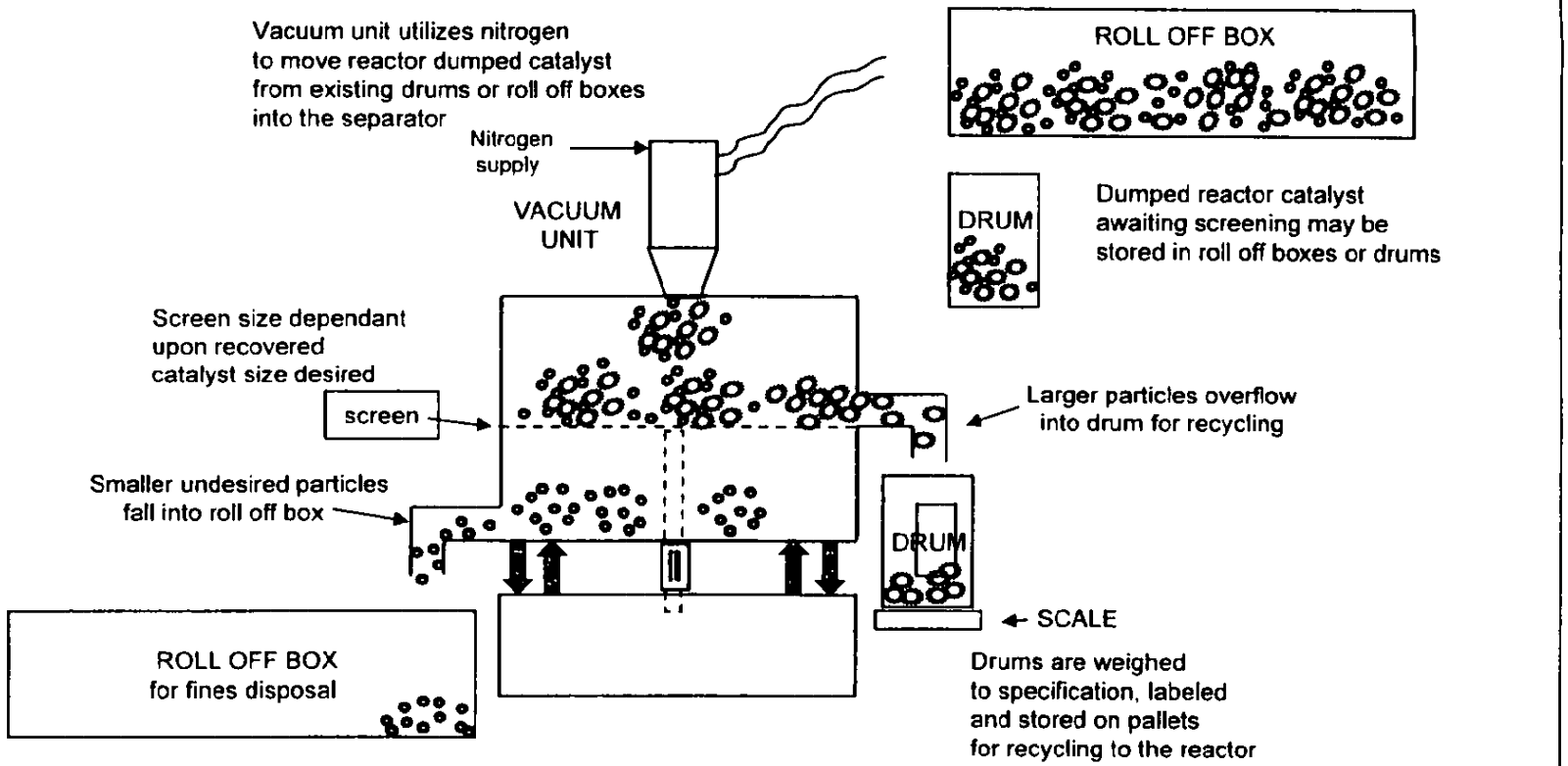
Parameter	Low		High	Units
1,2-Dichloroethane	0	To	460	mg/kg
Tetrachloroethene	0	To	739	mg/kg
Trichloroethene	0	To	280	mg/kg
Hexachlorobutadiene	0	To	1622	mg/kg
Chloroethane	0	To	0.5	mg/kg
1,2-Dibromo-3-chloropropane	0	To	24.3	mg/kg
1,1,2,2-Tetrachloroethane	0	To	338	mg/kg
1,1,2-Trichloroethane	0	To	8.4	mg/kg
1,1,1,2-Tetrachloroethane	0	To	381	mg/kg
1,2-Dichlorobenzene	0	To	64	mg/kg
1,3-Dichlorobenzene	0	To	10.1	mg/kg
1,4-Dichlorobenzene	0	To	92.2	mg/kg
1,2,4-Trichlorobenzene	0	To	337	mg/kg

Typical Waste Classification (if disposed)

Non-hazardous solid waste
or
Characteristic hazardous waste (D028, D033, D039, D040)

Schematic of Catalyst Screening Process

Attachment 2



The separator is a screening device that vibrates about its center of mass. Vibration is accomplished by eccentric weights on the upper and lower ends of the motion-generator shaft. Rotation of the top weight creates vibration in the horizontal plane while the lower weight acts to tilt the separator vertically causing material to move across the screen to the sides and out of the discharge spouts into the containers.

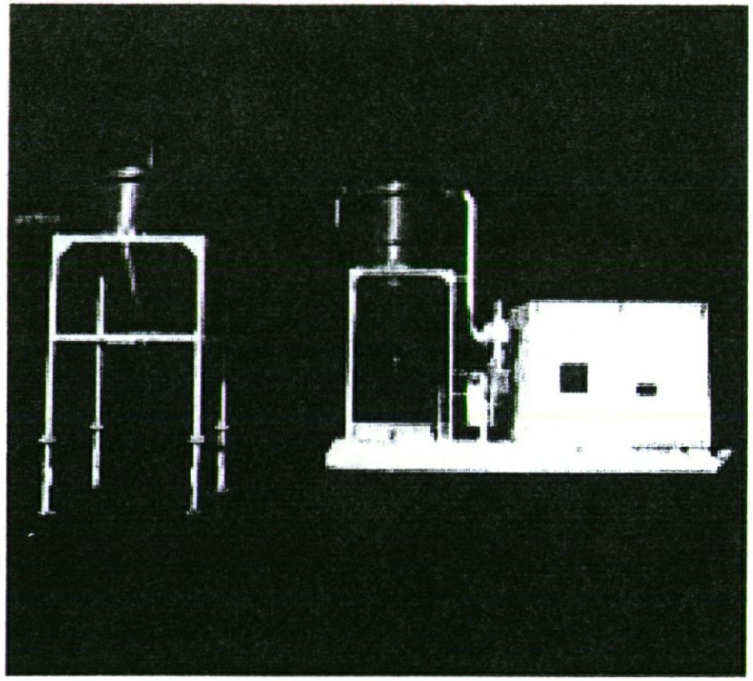
ATTACHMENT 2
Catalyst Separator Process

PPG Industries, Inc. – Lake Charles

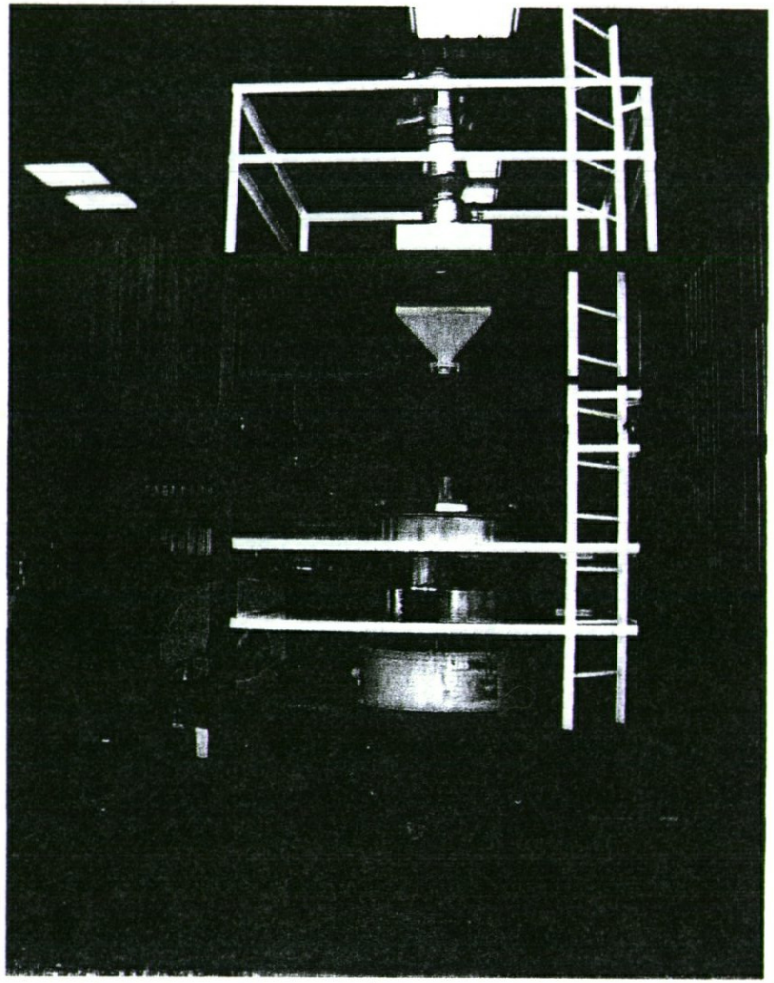
ERM

Photographs of Catalyst Separator

Attachment 3



Catalyst transfer system

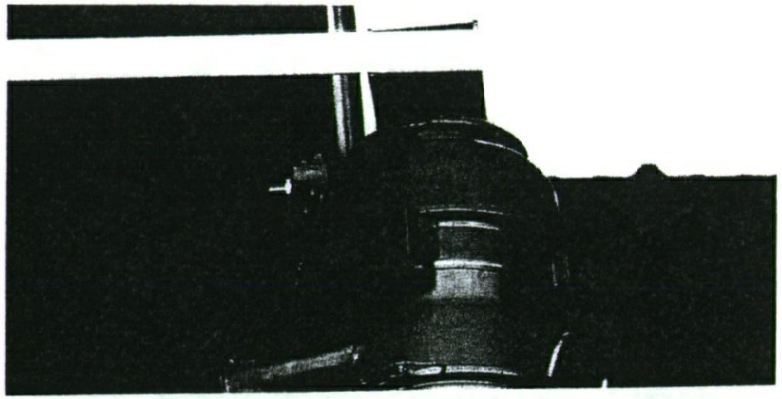


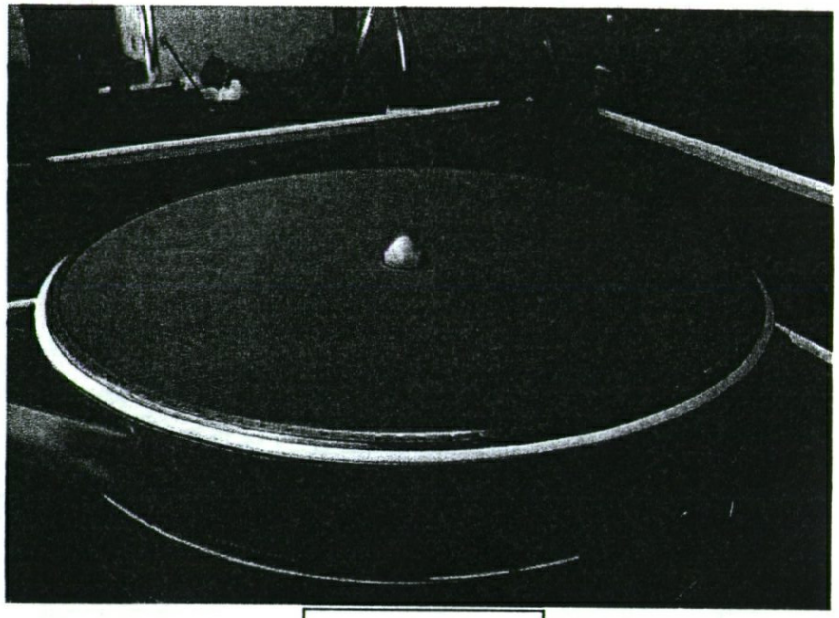
Catalyst screening system

ATTACHMENT 3
Catalyst Separator

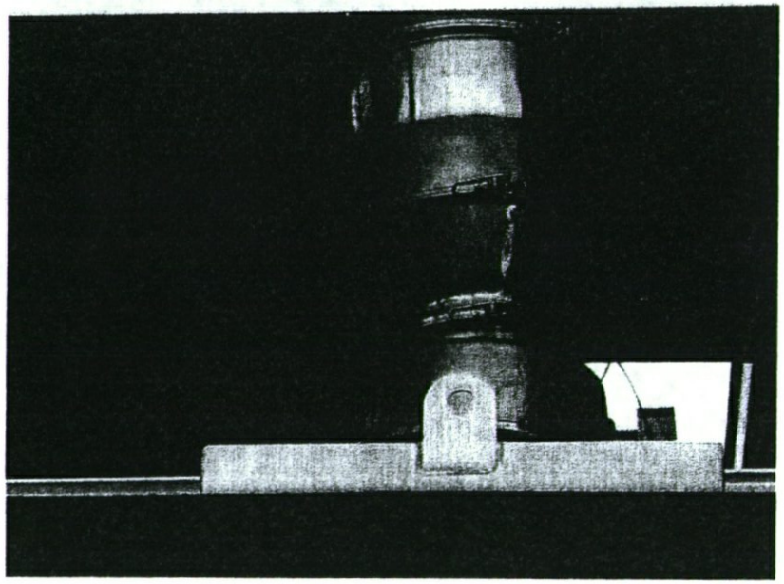
PPG Industries, Inc. – Lake Charles

PPG ERM





Separation Sieve



Catalyst transfer system and dust collectors

ATTACHMENT 3
Catalyst Separator

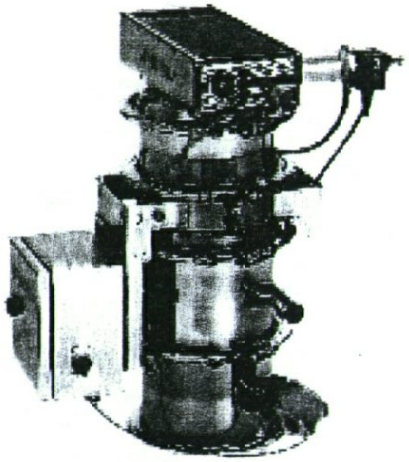
PPG Industries, Inc. – Lake Charles

PPG

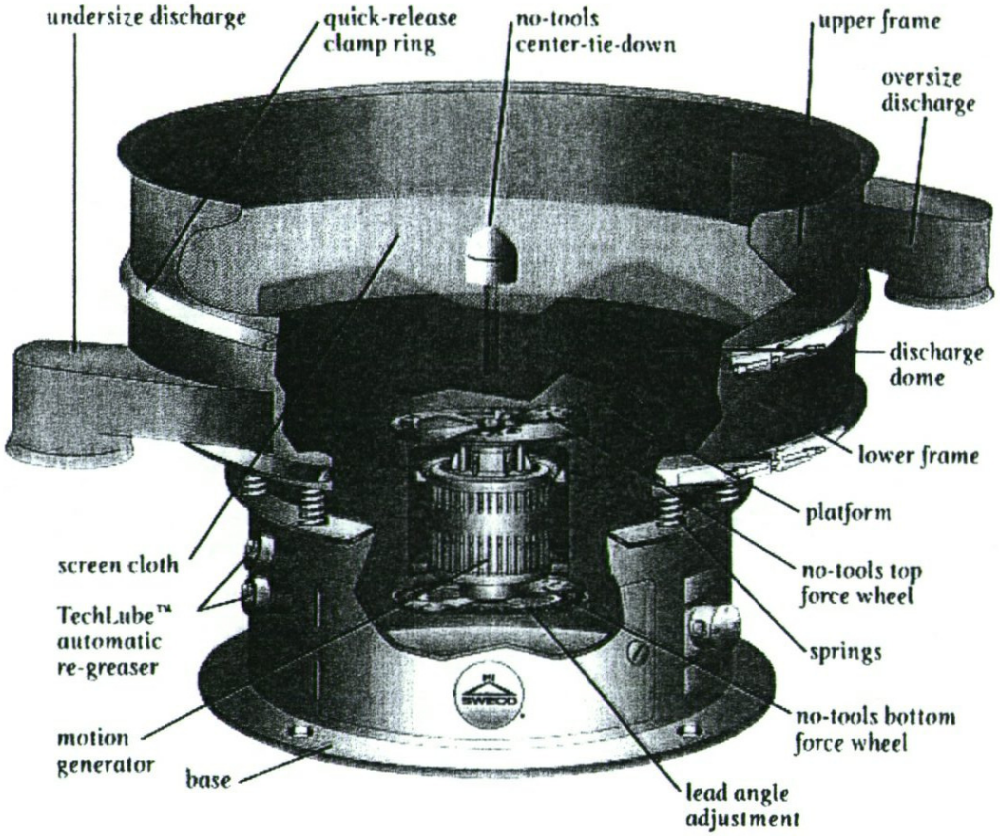
ERM

Schematic of PIAB Vacuum Conveyor System

Attachment 4



Vacuum conveyor manufactured by PIAB



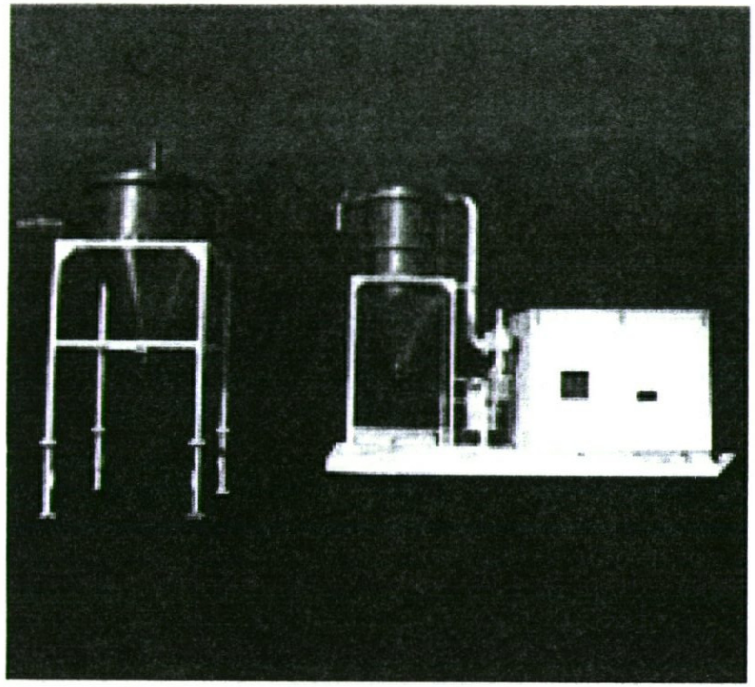
ATTACHMENT 4
Catalyst Separator

PPG Industries, Inc. – Lake Charles

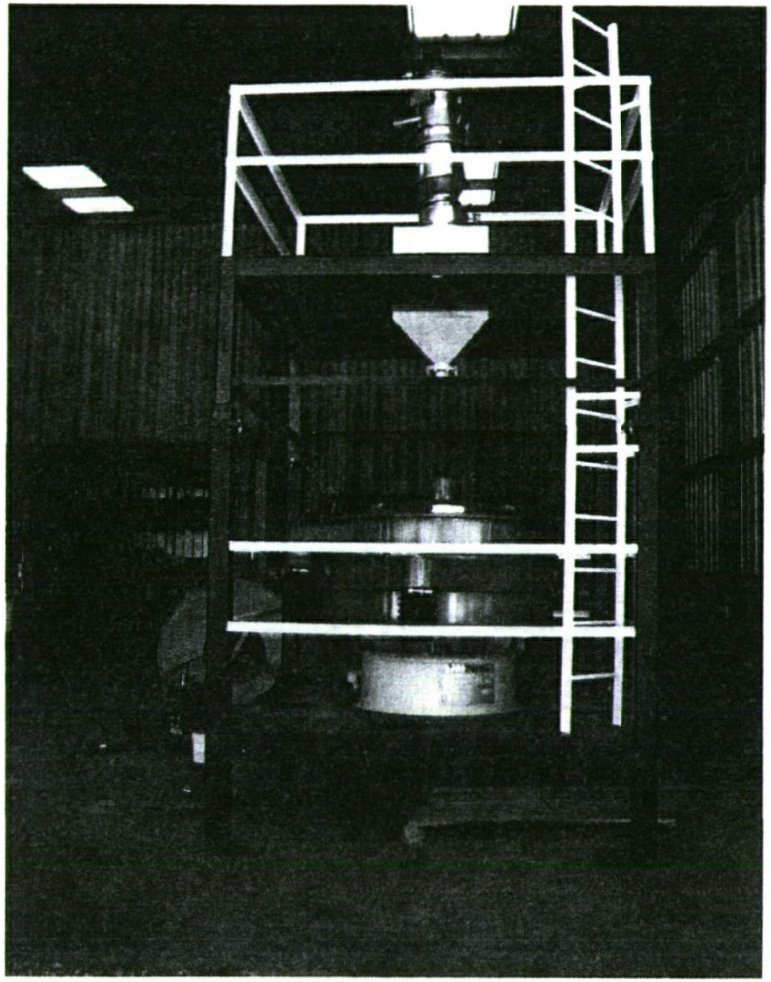
PPG ERM

Photographs of Catalyst Separator

Attachment 3



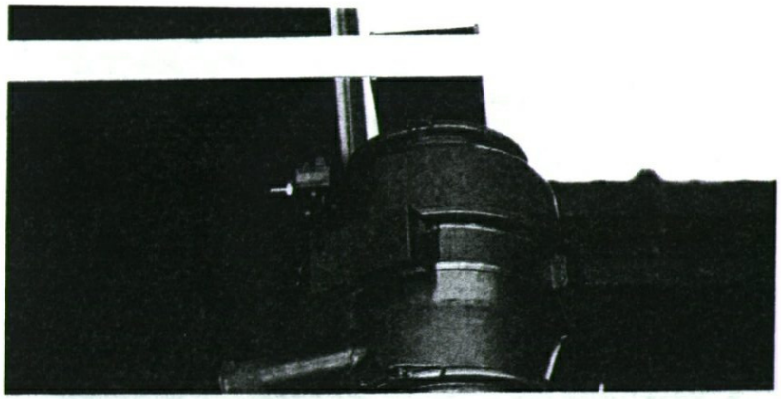
Catalyst transfer system

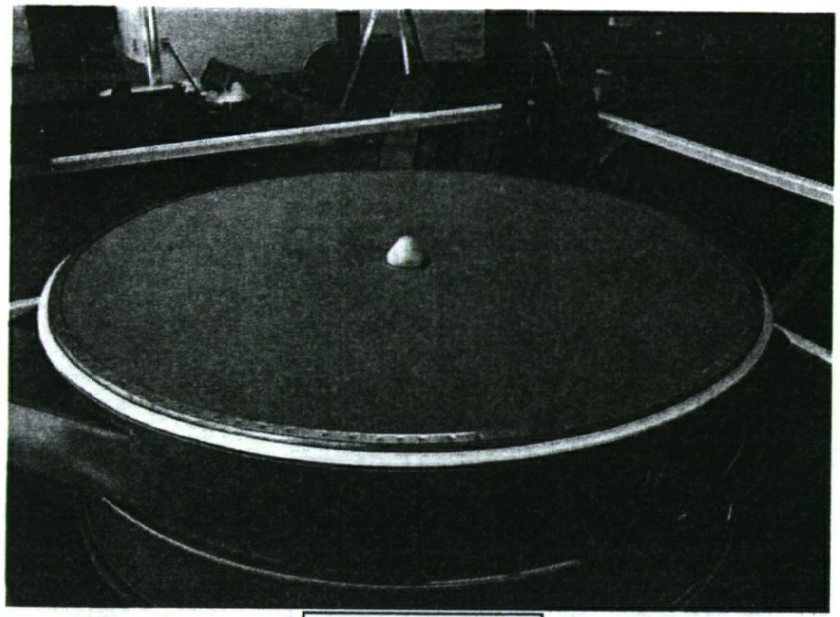


Catalyst screening system

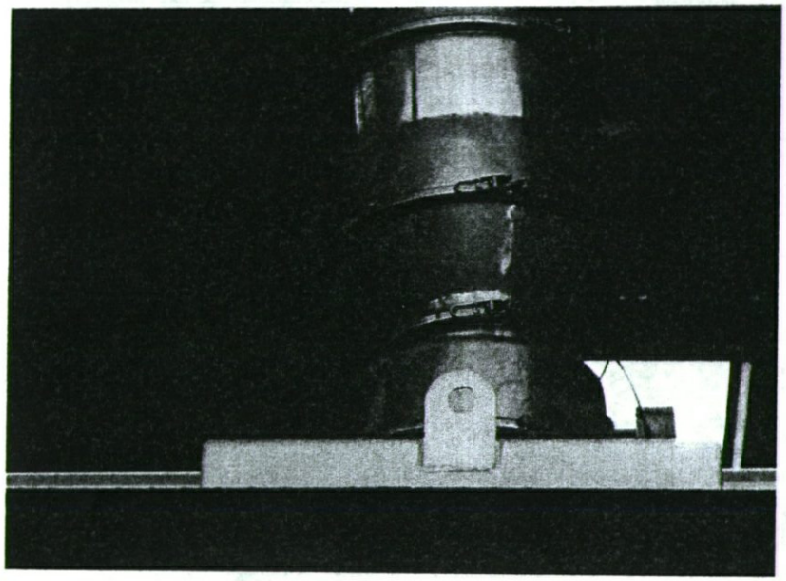
ATTACHMENT 3
Catalyst Separator

PPG Industries, Inc. – Lake Charles





Separation Sieve



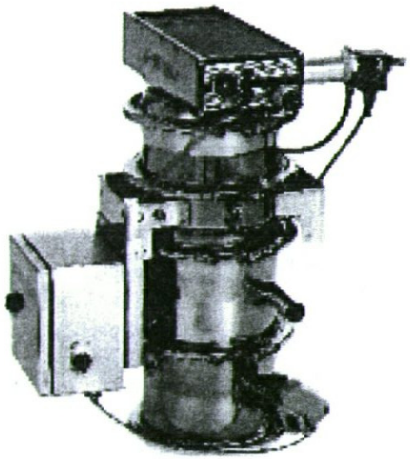
Catalyst transfer system and dust collectors

ATTACHMENT 3
Catalyst Separator

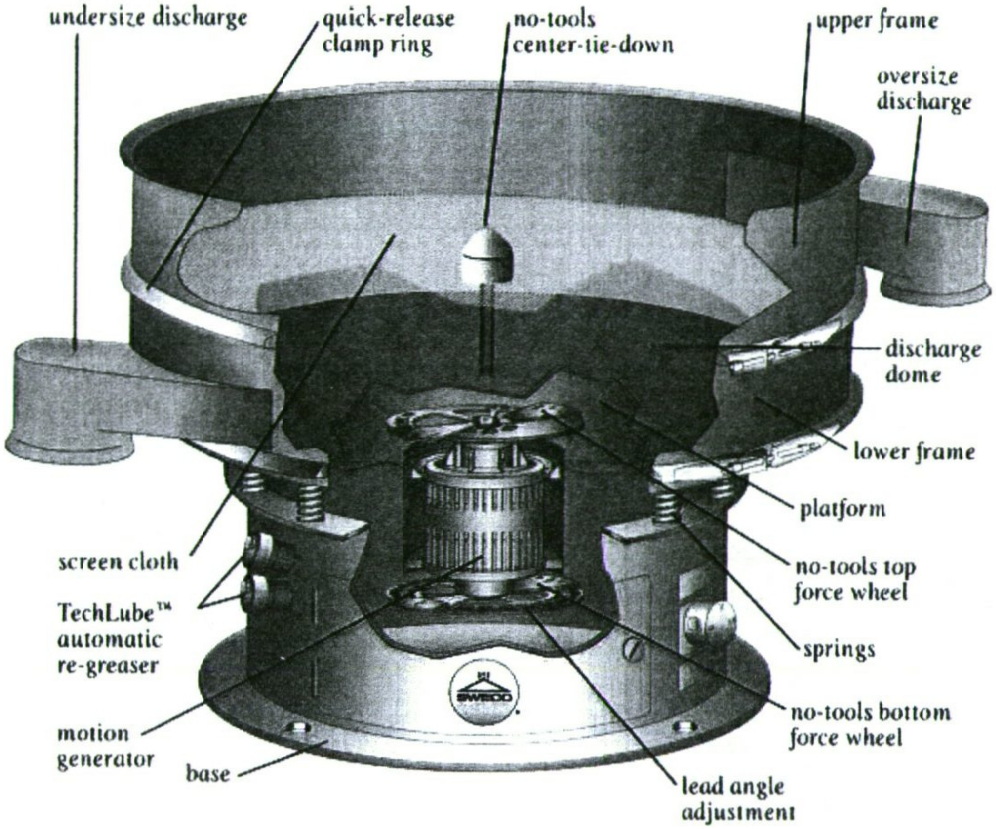
PPG Industries, Inc. – Lake Charles

PPG

ERM

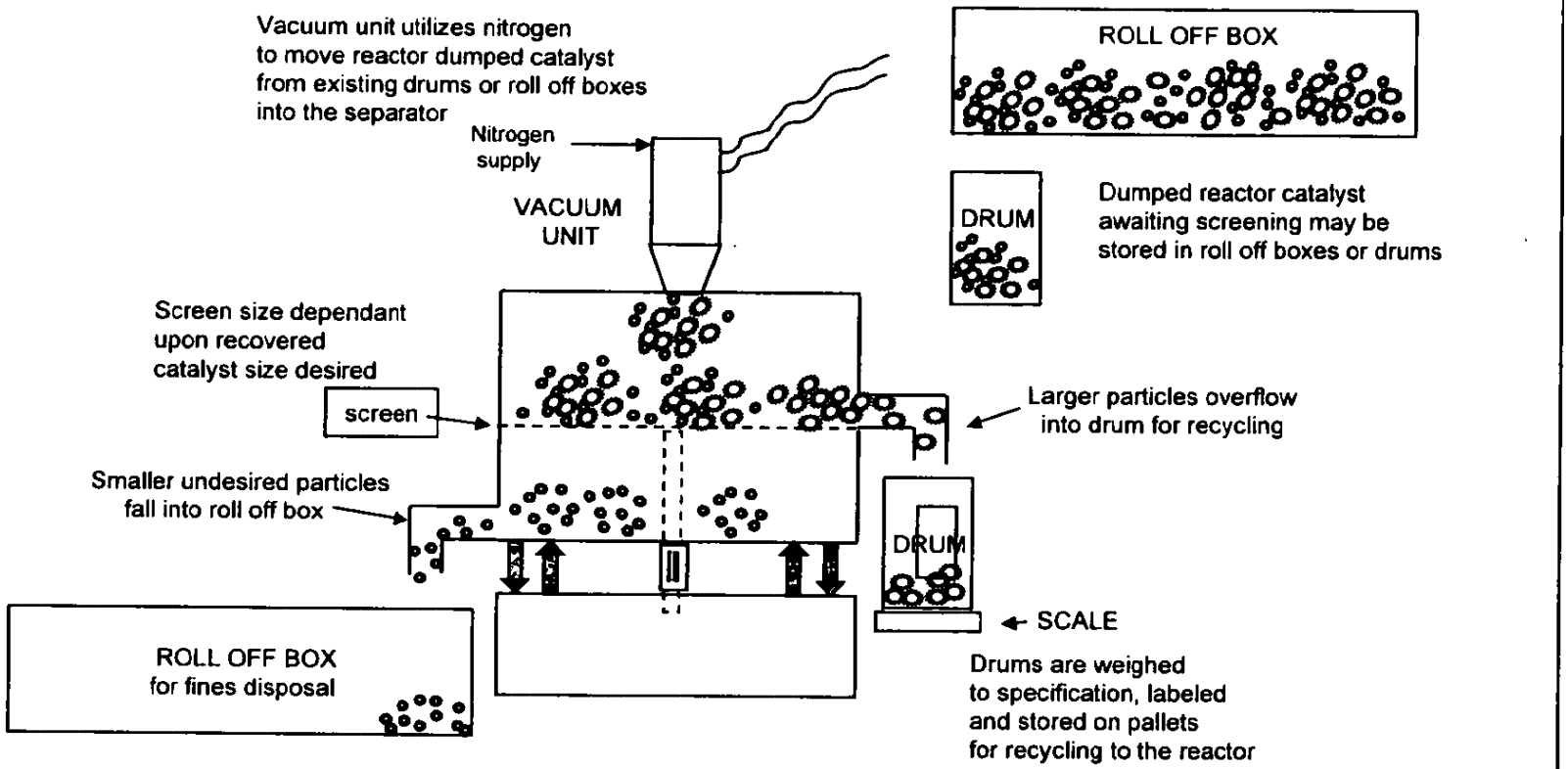


Vacuum conveyor manufactured by PIAB



ATTACHMENT 4
Catalyst Separator

PPG Industries, Inc. – Lake Charles



The separator is a screening device that vibrates about its center of mass. Vibration is accomplished by eccentric weights on the upper and lower ends of the motion-generator shaft. Rotation of the top weight creates vibration in the horizontal plane while the lower weight acts to tilt the separator vertically causing material to move across the screen to the sides and out of the discharge spouts into the containers.

ATTACHMENT 2
Catalyst Separator Process

PPG Industries, Inc. – Lake Charles

Classification of Copper Catalyst

PPG Industries, Inc.

Lake Charles Complex

Purpose

- Review background information on current management of copper catalyst
- Review scenarios for recycle of copper catalyst
- Obtain agency concurrence with PPG classification and management of copper catalyst

Benefits of Recycle of Copper Catalyst

- Reduced dependence on virgin resources extracted from the environment
- Reuse of the "good" copper catalyst would result in less disposal of hazardous waste in Louisiana (approximately 147 tons annually)
- Significant cost savings (over $500,000 annually)

PPG Specifically Requests LDEQ Concurrence With the Following

- OHC Used Reactor Catalyst that is removed from the OHC reactor and screened according to the process described herein and then returned to an OHC reactor for further use is not a solid waste under LAC 33:V.109. because
  - It is not a spent material or any other secondary material
  - It is used as a substitute for a commercial catalyst and/or
  - The screening process is only incidental processing, not reclamation as 75% of the material sent for screening can be reused and only 25% is destined for off-site disposal.

- If LDEQ does not agree with PPG's classification of OHC Used Reactor Catalyst, LDEQ will also issue a variance pursuant to LAC 33:V.105.O.1.b. and/or 105.O.2.b (materials reclaimed on-site and used in a process) for such catalyst provided PPG manages such catalysts by screening and reusing the catalyst as described herein.

- Per/Tri Blowdown that is removed from the processes and screened prior to being returned to reactors is not a solid waste under LAC 33:V.109 because
  - It is not a spent material or any other secondary material
  - It is used as a substitute for a commercial catalyst and/or
  - The screening process is only incidental processing, not reclamation as about half of the material sent for screening can be reused and only half is destined for off-site disposal.

- LDEQ will issue a variance from the definition of solid waste pursuant to LAC 33:V.105.O.1.b. and/or 105.O.2.b. for the Per-Tri Blowdown Catalyst provided PPG manages such catalysts by screening and reusing such catalyst as described herein.

Current Management

- PPG's Perchloroethylene and Trichloroethylene (Per/Tri) reactors located at the Per/Tri Unit and Oxy-hydrochlorination (OHC) reactors located in the Triethane (TE-II) and Vinyl Chloride (PHH) Production Units are all part of PPG's highly integrated Derivatives Plant.

- These reactors use a copper catalyst in fluidized reactor beds.

- Reactor Used Catalyst: When one of the reactor beds requires service the copper catalyst is removed from the reactor and managed as follows:

  - **Per/Tri Reactor Used Catalyst [not at issue]**
    - 95-100% is returned to the Per/Tri reactor for direct reuse with no prior screening or treatment
    - 0-5% is sent to an OHC Reactor for direct reuse with no prior screening or treatment

  - **OHC Reactor Used Catalyst**
    - 66% is returned to the OHC Reactor with no prior screening or treatment
    - 33% is sent for off-site treatment/disposal as a solid or hazardous waste

- Blowdown Catalyst: In addition, the Per/Tri and OHC reactors also have blowdown streams which are collected and sent off-site for disposal as either a solid or hazardous waste.

Current Management (continued)

- The used catalyst not returned to the process is stored in containers within PPG's RCRA permitted container storage yard prior to off-site shipment.
- The used catalyst is tested prior to the off-site treatment and disposal to determine whether the material is a characteristic hazardous waste.
- When hazardous, typically the waste stream is characteristic for EDC, HCBD, tetrachloroethylene, and/or trichloroethylene and is described by waste codes D028, D033, D039, and/or D040.
- About 80% of the material to be sent off-site is characteristic hazardous waste and about 20% is industrial solid waste.

PPG Proposed Management of Copper Catalyst

- Remove catalyst from the reactor catalyst bed or the blowdown systems to either drums or roll-off boxes for temporary storage of the unprocessed materials prior to screening within PPG's permitted RCRA container storage area
- Screen the catalyst (OHC Reactor Used Catalyst, Per/Tri blowdown) through a separator located in the permitted RCRA container storage area. The separator is equipped with a vacuum unit that uses nitrogen to move catalyst from the drums or roll-off boxes into the separator.
- The separator vibrates about its center of mass to separate the catalyst. Vibration is accomplished by eccentric weights located on the upper and lower ends of the screener's motion-generator shaft. Rotation of the top weight creates vibration in the horizontal plane while the lower weight acts to tilt the separator vertically, causing material to move across a mesh sieve inside the separator to the sides and out of the discharge spouts into containers.
- The larger particles separate from the smaller "fines" and discharge from the side of the unit. The larger particles flow into drums which are weighed to specification, labeled, and stored on pallets for recycling in one of the reactors.
- The smaller undesirable "fines" fall through the sieve into a roll-off box. Most of the fines will be disposed, but in some circumstances where there is a need for a certain proportion of smaller fines in the catalyst blend for the recharging of the beds, such fines may be reused.
- Different screen sizes can be used in order to achieve the appropriate end catalyst particle sizes.

Applicable Regulations

- Federal and Louisiana Regulations now differ due to EPA adoption of revised definition of "solid waste" under the RCRA rules
- Under EPA revised definition, none of the catalyst that is recycled as proposed by PPG would be "solid waste"
- EPA's definition has not yet been adopted by LDEQ
- LDEQ's rules are the same as the "old" RCRA rules, thus older RCRA guidance and decisions interpreting these are relevant

Definition of Solid Waste -Federal

- 40 CFR 261.2.a.2.ii as amended in October 2008 states:

"A hazardous secondary material is not discarded if it is generated and reclaimed under the control of the generator as defined in §260.10, it is not speculatively accumulated as defined in §261.1(c)(8), it is handled only in non-land-based units and is contained in such units, it is generated and reclaimed within the United States and its territories, it is not otherwise subject to material-specific management conditions under §261.4(a) when reclaimed, it is not a spent lead acid battery (see §266.80 and §273.2), it does not meet the listing description for K171 or K172 in §261.32, and the reclamation of the material is legitimate, as specified under §260.43."

Louisiana Definition of Solid Waste

- Under LAC 33:V.109, definition of solid waste, a material is a solid waste if it is discarded

- A material is discarded if it is abandoned, recycled in certain ways, inherently waste-like, or a military munition identified in LAC 33:V.5303. For purposes of this presentation, the only issue is whether the PPG proposed recycling is one of the types of recycling that results in the material being classified as a solid waste.

- Paragraph 3 of the definition of solid waste indicates that materials are solid wastes if they are recycled, accumulated, treated before recycling in one of the following ways:
  - Used in a manner constituting disposal
  - Burned for energy recovery
  - Reclaimed - if one of the following types of secondary materials
    - a "spent material" (potentially applicable to used copper catalyst),
    - a listed sludge (not applicable to copper catalyst), or
    - a listed by-product (not applicable to copper catalyst)
  - Accumulated speculatively- applies to all secondary materials

Definition of "Spent Material"

- LAC 33:V.109

"*Spent Material* – a *spent material* is any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced."

- Definition is the same as federal rules.

Definition of Reclaimed

- LAC 33:V.109

"Reclaimed Material – a material is reclaimed if it is processed to recover a usable product, or if it is regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents."

- Definition is the same as federal rules.

Materials That Are Not Solid Wastes When Recycled

- LAC 33:V.109, Definition of Solid Waste, Paragraph 5
  5. Materials That Are Not Solid Waste When Recycled

  a. materials are not solid wastes when they can be shown to be recycled by being:
     i. used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or
     ii. Used or reused as effective substitutes for commercial products; or
     iii. Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials....

EPA Guidance on "Spent Materials"

- Mercuric chloride catalyst used in a production process is a spent material when it is taken out of service, regardless of contamination. Spent materials are solid wastes when sent for reclamation. "Contamination" refers to any impurity, factor, or circumstance which causes a material to be taken out of service for reprocessing. RCRA Online No. 11821.

- Materials such as used lead-acid batteries (battery), solvents, and mercury thermostats and switches are spent materials when sent for reclamation, even if they can still be used for their original purpose. We thus consider "contamination", as used in the definition of spent material, to be any impurity, factor or circumstance which causes the material to be taken out of service for reprocessing. ... Regarding whether a material must be nonfunctional to meet the definition of spent material, the fact that a material can continue to be used for its original purpose is not relevant to the issue of whether or not it is a spent material when it is clear from the facts that the material will not be used but instead will be treated by reclamation. RCRA Online No. 11822

- Thus, it appears that the determination of whether reclamation is occurring or not is the central issue with respect to classification of PPG catalyst.

- The Per/Tri Used Catalyst removed from the reactor during servicing, but later reinserted into either the same or another Per/Tri reactor or an OHC reactor for the same purpose with no prior screening is not spent and is not being reclaimed.

EPA Guidance on Incidental Processing vs. Reclamation (Oct. 4, 2004)

- The preamble to the 1985 Definition of Solid Waste regulations states that materials which undergo only "incidental processing" are not reclaimed and thus can be excluded under the use/reuse provisions. (See January **4,1985, 50 FR** 639.)

- "Use and reuse of materials that would otherwise be disposed of conserves our natural resources by minimizing the use of raw materials, saving disposal capacity, and making use of the value remaining in these materials. In some cases, these materials may undergo some degree of processing before or during reuse. The goal of this document is to provide guidance on when these activities may, based on case-specific circumstar;ces, involve "incidental processing," as opposed to reclamation that may be regulated as a hazardous waste management activity."

- The RCRA hazardous waste management regulations recognize that not all recycling activities involve waste management. Legitimately using or reusing secondary materials as ingredients in an industrial process or as effective substitutes for commercial products is therefore excluded from RCRA regulation pursuant to the use/reuse exclusions of 40 CFR 261.2(e).

EPA Guidance on Incidental Processing vs. Reclamation (Oct. 4, 2004)

- All of the examples discussed in the 1985 preamble are activities that: (1) change a material's physical form without changing the mass of the material or its chemical composition,or (2) make only a minor change to the mass of the material, which also may make a minor change to the chemical composition of the material.

- EPA has identified other examples of incidential processing where the processing steps only made changes to the physical form or minor changes to the mass of the material:
  - Shredding and grinding leather trimmings to attain required particle sizes
  - Triple distillation of 99% pure mercury to a higher specification4
  - Filtration to protect the mechanical integrity of product handling equipment, such as pumps
  - Final filtration to remove minute quantities of particulate matter to guarantee the quality of the product

- EPA believes activities such as the following are incidental processing

  - A process that increases or reduces particle size, including crushing
  - Melting of base metals (as when lead or scrap metal is introduced to a production process and converted from a solid into a liquid, or when solder is melted and used in a molten form in solder pots)
  - Viscosity adjustment
  - Minor physical or gravity separation without the addition of chemicals (e.g., flocculation agents)
  - Screening or filtering to protect the integrity of downstream pumps or equipment from inert foreign objects such as loose screws, nutss, bolts, cigarette butts, etc.
  - Ensuring purity by separating minor amounts of foreign material (e.g., grit, ash, or water)
  - Final processing (e.g, clarifying or settling) of a material that closely resembles a finished product to remove minor impurities

PPG OHC Reactor Used Catalyst Proposal

- The majority of the catalyst is reused without screening – not a solid waste – no issue

- Of the amount that would be sent to be screened 75% would be reused - this should be incidental processing – not reclamation
  - Screening is to obtain the desired particle size
  - It is a minor physical separation without the addition of chemicals
  - A substantial portion of the material screened is reused as a substitute for virgin catalyst

PPG Proposal on Per/Tri Blowdown Catalyst

- Screening would be typically required for all of the blowdown catalyst
- Typically about half of the material screened would be able to be reused as a substitute for virgin catalyst while about half would be disposed
- Need LDEQ determination on whether screening here is incidental processing versus reclamation
  - Process is physical process without chemical addition
  - The process is accomplished simply to obtain appropriate particle size distribution (not due to contamination and not for recovery of copper or any other metal)
  - A substantial amount of material is generated and reused as a substitute for a virgin catalyst
- If "incidental", then the material is not a solid waste; if reclamation then PPG requests a variance per LAC 33:V.105.O.

Variances for Materials Reclaimed and Reused

- LAC 33:V.105.O.1.b provides a case-by-case variance from classifying materials as solid wastes if they are reclaimed and then reused within the original process in which the materials were generated. [Same as prior 40 CFR 261.30]

- LAC 33:V.105.O.2.b. provides a case-by-case variance for materials that are reclaimed and then reused as feedstock within the original primary production process if the reclamation operation is an essential part of the production process. [Same as prior 40 CFR 261.32(b)]

EPA Guidance on Reuse of Catalyst

- RCRA Online No. - While a catalyst is not used in a production process as an ingredient or reactant, it is generally considered to contribute directly to the production process by facilitating chemical reactions. Therefore, we would consider the reuse of a reclaimed spent catalyst to be "reuse" for the purposes of this variance, assuming the catalyst is actually reused in the original primary production process rather than an ancillary process) for its original purpose. [Discussing variance under former 40 CFR 261.32(b)]

PPG's Proposed Reuse of Catalyst

- **Such reuse should be considered "incidental processing" not reclamation such that the catalyst is not considered to be solid waste. In the alternative, a case-by-case variance under LAC 33:V.105.O should be issued because:**
  - **The industrial process from which the catalysts are removed will become more economical by use of the screening process by avoiding the purchase of virgin materials and waste disposal costs.**
  - **The management of the copper catalyst prior to screening is in drums or roll-off boxes –similar to the management of virgin purchased material, which is also managed in drums or containers.**
  - **The recovery process will occur on-site at PPG in the permitted RCRA 1 or RCRA 2 storage areas. Although this would not be legally required, management within such areas provides additional protectiveness.**
  - **Off-site transport requirements will decrease as less waste material will be generated.**
  - **The reclaimed material is a direct substitute for virgin catalyst in the Per/Tri and OHC reactors and will be returned in substantially its original form.**
  - **PPG will be the producer, processor, and user of the catalyst – all operations will be on site as do other manufacturing operations and no aspect of waste disposal is involved other than the significantly reduced volume of catalyst fines that cannot be reused which will be sent off-site for treatment and disposal.**

Management in Less Than 90-Day Tanks or Containers

- While the Department is reviewing the appropriate classification of these catalysts, when screened and reused, PPG intends to store and screen the OHC Reactor Used Catalyst, Per/Tri Blowdown Catalyst as follows:
  - **Storage after removal from the process but prior to screening will be in containers that meet the less-than-90 day storage requirements under LAC 33:V.1109.E.**
  - **Screening will occur in the separator that meets the definition of a tank and PPG will manage the separator per the requirements for less-than-90 day storage under LAC 33:V.1109.E.**
- If managed in this way, the screened materials that can be used are no longer solid wastes once they have been screened, provided they are used legitimately in place of virgin catalyst.
- If managed in this way, the screened materials that are not capable of reuse must be managed as solid wastes and, if characteristically hazardous, as hazardous waste.
- Although the catalysts can be managed in less than 90-day containers and tanks, such places an operating burden on PPG; thus, PPG is still seeking determination that such catalysts are not solid wastes, as described herein.

Summary

- The portion of the OHC Reactor Used Catalyst removed from the reactor, then screened is not a solid waste where about 75% of the screened material is reused, because such screening is incidental processing. The 25% of the material from the screening process which is not used is solid waste, and if characteristic, is hazardous waste.

- All Per/Tri Blowdown Catalyst would require screening prior to reuse. If screened, about 50% would be reused. Such screening should be considered to be incidental processing, not reclamation, such that return of any of this material to either Per/Tri or OHC reactors would mean that such blowdown catalyst is not solid waste.

- In the alternative, LDEQ should issue a case-by-case variance under LAC 33:V.105.O. such that neither the OHC Reactor Used Catalyst or Per/Tri Blowdown Catalyst requiring screening would be solid waste when managed in this manner. Any catalyst resulting from the screening process not to be reused would be a solid waste, and if characteristic, would also be a hazardous waste.

- Regardless of whether the used catalyst from any of these sources is solid waste/hazardous waste, PPG may manage such used catalyst in containers or tanks meeting the requirements of 40 C.F.R. 262.34 and LAC 33:V.1109, including treatment of such catalyst by screening in a separator that meets the definition of tank. The used catalyst screened and returned to a process is not a solid waste.